

CLAIMS:

What is claimed is:

1 1. A method of generating a composite style sheet for an
2 electronic document, comprising: identifying a plurality of subset
3 style sheets based on content of the electronic document; and
4 merging the plurality of subset style sheets into a
5 composite style sheet.

1 2. The method of claim 1, wherein the plurality of subset
2 style sheets include a global style sheet and wherein merging the
3 plurality of subset style sheets includes inserting other subset
4 style sheets of the plurality of subset style sheets into the
5 global style sheet.

1 3. The method of claim 2, wherein inserting the other
2 subset style sheets of the plurality of subset style sheets into
3 the global style sheet includes converting a root template in
4 each of the other subset style sheets to a child template.

1 4. The method of claim 3, wherein inserting the other
2 subset style sheets of the plurality of subset style sheets into
3 the global style sheet further includes adjusting match phrases
4 of embedded child templates and references in each of the other
5 subset style sheets.

1 5. The method of claim 2, wherein the other subset style
2 sheets are inserted following a root template of the global style
3 sheet.

1 6. The method of claim 1, wherein identifying a plurality
2 of subset style sheets includes parsing the electronic document
3 into a document object model and examining first level child
4 elements of the document object model.

1 7. The method of claim 6, wherein identifying a plurality
2 of subset style sheets further includes matching values of the
3 first level child elements to characteristic identifiers of
4 subset style sheets in a subset style sheet repository and
5 selecting the plurality of subset style sheets from the subset
6 style sheets in the subset style sheet repository based on
7 whether the first level child element values match characteristic
8 identifiers for the subset style sheets.

1 8. The method of claim 1, further comprising storing the
2 composite style sheet in a composite style sheet repository.

1 9. The method of claim 1, further comprising determining
2 if a composite style sheet for the electronic document is present
3 in a composite style sheet repository and, if a composite style
4 sheet for the electronic document is not present in the composite
5 style sheet repository, performing the identifying and merging
6 steps.

1 10. The method of claim 2, wherein the global style sheet
2 includes electronic document navigational information.

1 11. The method of claim 1, further comprising determining
2 if a client device to which the electronic document is to be sent
3 is capable of rendering the electronic document using the
4 composite style sheet, and sending the electronic document to the
5 client device with a reference to the composite style sheet.

1 12. The method of claim 11, further comprising rendering
2 the electronic document using the composite style sheet and
3 sending the rendered electronic document to the client device, if
4 the client device is not capable of rendering the electronic
5 document using the composite style sheet.

1 13. The method of claim 12, wherein the rendered electronic
2 document is one of an HTML document and a WML document.

1 14. The method of claim 1, wherein identifying a plurality
2 of subset style sheets further includes identifying the plurality
3 of subset style sheets based on characteristics of a client
4 device to which the electronic document is to be sent.

1 15. The method of claim 2, wherein the global style sheet
2 includes a prefix/postfix glue that generates cards from the
3 merged subset style sheets.

1 16. An apparatus for generating a composite style sheet for
2 an electronic document, comprising:
3 a style sheet repository; and
4 a transcoder coupled to the style sheet repository,
5 wherein the transcoder identifies a plurality of subset style

6 sheets in the style sheet repository that correspond to the
7 electronic document, based on content of the electronic document,
8 and merges the plurality of subset style sheets into a composite
9 style sheet.

1 17. The apparatus of claim 16, wherein the plurality of
2 subset style sheets include a global style sheet and wherein the
3 transcoder merges the plurality of subset style sheets by
4 inserting other subset style sheets of the plurality of subset
5 style sheets into the global style sheet.

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11 18. The apparatus of claim 17, wherein the transcoder
12 inserts the other subset style sheets of the plurality of subset
13 style sheets into the global style sheet by converting a root
14 template in each of the other subset style sheets to a child
15 template.

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21 19. The apparatus of claim 18, wherein the transcoder
22 inserts the other subset style sheets of the plurality of subset
23 style sheets into the global style sheet by further adjusting
24 match phrases of embedded child templates and references in each
25 of the other subset style sheets.

1 20. The apparatus of claim 17, wherein the transcoder
2 inserts the other subset style sheets following a root template
3 of the global style sheet.

1 21. The apparatus of claim 16, wherein the transcoder
2 identifies the plurality of subset style sheets by parsing the

3 electronic document into a document object model and examining
4 first level child elements of the document object model.

1 22. The apparatus of claim 21, wherein the transcoder
2 identifies the plurality of subset style sheets by further
3 matching values of the first level child elements to
4 characteristic identifiers of subset style sheets in the subset
5 style sheet repository and selecting the plurality of subset
6 style sheets from the subset style sheets in the subset style
7 sheet repository based on whether the first level child element
8 values match characteristic identifiers for the subset style
9 sheets.

1 23. The apparatus of claim 16, further comprising a
2 composite style sheet repository for storing the composite style
3 sheet.

1 24. The apparatus of claim 23, wherein the transcoder
2 determines if a composite style sheet for the electronic document
3 is present in the composite style sheet repository and, if a
4 composite style sheet for the electronic document is present in
5 the composite style sheet repository, the transcoder makes use of
6 the composite style sheet in the composite style sheet
7 repository.

1 25. The apparatus of claim 17, wherein the global style
2 sheet includes electronic document navigational information.

1 26. The apparatus of claim 16, wherein the transcoder
2 determines if a client device to which the electronic document is
3 to be sent is capable of rendering the electronic document using
4 the composite style sheet, and sends the electronic document to
5 the client device with a reference to the composite style sheet.

1 27. The apparatus of claim 26, wherein the transcoder
2 renders the electronic document using the composite style sheet
3 and sends the rendered electronic document to the client device,
4 if the client device is not capable of rendering the electronic
5 document using the composite style sheet.

1 28. The apparatus of claim 27, wherein the rendered
2 electronic document is one of an HTML document and a WML
3 document.

1 29. The apparatus of claim 16, wherein the transcoder
2 identifies the plurality of subset style sheets by identifying
3 the plurality of subset style sheets based on characteristics of
4 a client device to which the electronic document is to be sent.

1 30. The apparatus of claim 17, wherein the global style
2 sheet includes a prefix/postfix glue that generates cards from
3 the merged subset style sheets.

1 31. A computer program product in a computer readable
2 medium for generating a composite style sheet for an electronic
3 document, comprising:

4 first instructions for identifying a plurality of
5 subset style sheets based on content of the electronic document;
6 and

7 second instructions for merging the plurality of subset
8 style sheets into a composite style sheet.

1 32. The computer program product of claim 31, wherein the
2 plurality of subset style sheets include a global style sheet and
3 wherein the second instructions for merging the plurality of
4 subset style sheets include instructions for inserting other
5 subset style sheets of the plurality of subset style sheets into
6 the global style sheet.

7 33. The computer program product of claim 22, wherein the
8 instructions for inserting the other subset style sheets of the
9 plurality of subset style sheets into the global style sheet
10 include instructions for converting a root template in each of
11 the other subset style sheets to a child template.

1 34. The computer program product of claim 33, wherein the
2 instructions for inserting the other subset style sheets of the
3 plurality of subset style sheets into the global style sheet
4 further include instructions for adjusting match phrases of
5 embedded child templates and references in each of the other
6 subset style sheets.

1 35. The computer program product of claim 32, wherein the
2 other subset style sheets are inserted following a root template
3 of the global style sheet.

1 36. The computer program product of claim 31, wherein the
2 first instructions for identifying a plurality of subset style
3 sheets include instructions for parsing the electronic document
4 into a document object model and examining first level child
5 elements of the document object model.

1 37. The computer program product of claim 36, wherein the
2 first instructions for identifying a plurality of subset style
3 sheets further include instructions for matching values of the
4 first level child elements to characteristic identifiers of
5 subset style sheets in a subset style sheet repository and
6 selecting the plurality of subset style sheets from the subset
7 style sheets in the subset style sheet repository based on
8 whether the first level child element values match characteristic
9 identifiers for the subset style sheets.

1 38. The computer program product of claim 31, further
2 comprising third instructions for storing the composite style
3 sheet in a composite style sheet repository.

1 39. The computer program product of claim 31, further
2 comprising third instructions for determining if a composite
3 style sheet for the electronic document is present in a composite
4 style sheet repository and, if a composite style sheet for the
5 electronic document is not present in the composite style sheet
6 repository, executing the first and second instructions.

1 40. The computer program product of claim 32, wherein the
2 global style sheet includes electronic document navigational
3 information.

1 41. The computer program product of claim 31, further
2 comprising:

3 third instructions for determining if a client device
4 to which the electronic document is to be sent is capable of
5 rendering the electronic document using the composite style
6 sheet; and

7 fifth instructions for sending the electronic document
8 to the client device with a reference to the composite style
9 sheet.

1 42. The computer program product of claim 41, further
2 comprising sixth instructions for rendering the electronic
3 document using the composite style sheet and sending the rendered
4 electronic document to the client device, if the client device is
5 not capable of rendering the electronic document using the
6 composite style sheet.

1 43. The computer program product of claim 42, wherein the
2 rendered electronic document is one of an HTML document and a WML
3 document.

1 44. The computer program product of claim 31, wherein the
2 first instructions for identifying a plurality of subset style
3 sheets further include instructions for identifying the plurality

4 of subset style sheets based on characteristics of a client
5 device to which the electronic document is to be sent.

1 45. The computer program product of claim 42, wherein the
2 global style sheet includes a prefix/postfix glue that generates
3 cards from the merged subset style sheets.

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